DOCUMENT RESUME

ED 214 144 CS 006 565

AUTHOR Warjanka, Irene
TITLE Differential Effect of Length of Day on Kindergarten Readiness.
PUB DATE Apr 82
NOTE 30p.; M. A. Thesis, Kean College of New Jersey.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; Academic Aptitude; Early Childhood Education; Educational Research; *Extended School Day; *Kindergarten; Learning Disabilities; *Learning Readiness; *Reading Readiness; *Skill Development; *Time Factors (Learning)

ABSTRACT

A study was conducted to determine how the length of the school day affects the academic achievement of kindergarten children who are deficient in readiness skill development (low performance in auditory memory, rhyming, letter recognition, visual matching, school language and listening, and quantitative language as measured by the Metropolitan Readiness Test). Subjects were 40 students who attended a regular half-session kindergarten program and 30 students screened as severely deficient in readiness skill development who attend an extended day program. At the end of six months, the students were given the Metropolitan Readiness test, the results of which indicated that the full-day participants had achieved the level of readiness skill development of the half-day participants. (HTH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED214144

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

DIFFERENTIAL EFFECT OF LENGTH OF DAY ON KINDERGARTEN READINESS

by
Irene Warjanka

Submitted in partial fulfillment
of the requirement for the Master
of Arts degree in Education at
Kean College of New Jersey
April 1982

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Irene Warjanka

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS006565

TABLE OF CONTENTS

		PAGE
I.	LIST OF TABLES	iii
II.	ABSTRACT	i
III.	HALF-DAY VS. EXTENDED DAY KINDERGARTEN PROGRAMS	
	Introduction	1
	Hypothesis	2
	Definitions	3
	Assumptions	3
	Procedures	4
	Limitations	6
	Results	6
	Conclusions	8
IV.	RELATED RESEARCH	10
V.	REFERENCES	22
	Appendix A	24

LIST OF TABLES

TABLE		PAGE
I.	METROPOLITAN READINESS TEST	7

The early years of a child's life are critical for building the foundation for later school learning. Bloom (1964) states that "from conception to age eight, eighty percent of all intelligence is developed," and that "from ages four to eight the impact of instruction has its greatest influence."

Early childhood education plays an important role in developing the critical cognitive skills needed for reading and writing. Lazar and others (1977) found that early childhood education has not only increased cognitive gains, but also has reduced the number of children assigned to special education classes as well as the number of children retained one or more grades. In light of these significant findings in early childhood education, the kindergarten of today must assume a more demanding function. Naron (1981) feels it must account for the different abilities of youngsters and provide identification and remediation of learning deficits as well as individualized instruction according to each child's needs. This function requires more instructional time than exists in a traditional half-day kindergarten program. One way to fulfill this function is to implement an extended-day kindergarten program. According to Winter and Kline

(1970), "extension of time does make possible a better balanced program that allows for a variety of approaches to learning and more individual attention at an age when this is crucial." Gorton and Robinson (1968) agree. They feel that the extra time gained in full day programs would give young children a greater opportunity for learning and development at a crucial time in their lives.

Many professional organizations have given support to the idea of extended-day kindergarten programs. Hess and others (1978) reported that The National Association for the Education of Young Children, the Council of Chief State School Officials and the American Association of School Administrators have expressed the need for more time than the traditional kindergarten offers.

The necessity for full day kindergarten is evident and the public schools must meet this new responsibility.

HYPOTHESIS

To provide additional evidence concerning this topic, with a modification of procedures to control the teacher variable, a study was conducted to determine if pupils with specific readiness skill deficiencies who attend an extended-day kindergarten will eventually reach the level of readiness skill development of those pupils who attend

a regular half-session kindergarten. It was hypothesized that the extended-day kindergarten pupils would reach the level of readiness skill development of those pupils attending a regular half-session kindergarten.

DEFINITIONS

Extended Day Kindergarten - attendance at school for an additional two hour period beyond the normal half-session (traditional).

Specific Readiness Skill Deficiencies - low performance in auditory memory, rhyming, letter recognition, visual matching, school language and listening, and quantitative language as measured by the Metropolitan Readiness Test.

Level of Readiness Skill Development - performance score of 66 or above on the Metropolitan Readiness Test.

ASSUMPTIONS

It was assumed that the Metropolitan Readiness Test was administered appropriately and that it is a reliable test for determining readiness ability. It was assumed that the experience and teaching ability of the staff remained constant.

INSTRUCTIONAL PROCEDURES, SAMPLE AND LIMITATIONS

At the beginning of the school year four groups of kindergarten students from Public School #39 in Jersey City, New Jersey were administered the Metropolitan Readiness Test Level 1 Form P. From these students, thirty were selected to attend the extended day kindergarten program. This number was in compliance with the specifications of funding for the program. The selection of participants in the extended day program was determined by a raw score of 65 or below on the Metropolitan Readiness Test Level 1 Form P. This selection was also determined in order of lowest score due to the fact that more than thirty pupils scored below 65.

The thirty participants attended a regular session kindergarten class for one part of the day and attended an extended-day kindergarten session for the other part of the day with a different teacher. Fifteen students attended a morning session of an extended-day kindergarten program with one teacher, went home for lunch, and returned for an afternoon session with a traditional half-session kindergarten class and a different teacher. The remaining fifteen participants attended a traditional half-session kindergarten class in the morning, went home

for lunch, and returned for an afternoon session of an extended-day kindergarten program.

Two teachers who possessed Bachelor of Arts degrees in education provided instruction to the traditional half-session kindergarten pupils. One teacher who possessed a Bachelor of Arts degree in education and is participating in a Master's program for Reading Specialization provided instruction in the extended-day kindergarten program.

The extended-day participants attended their traditional half-session program with other students who attended only the traditional half-session class. The traditional program consisted of reading and math readiness skill instruction integrated with music, art, and physical education. The extended-day program consisted of a more concentrated emphasis on readiness skills such as visual and auditory memory, visual and auditory discrimination, and language development. The pace for instruction was based on the participant's ability.

Conferences were held bi-monthly between the extended-day kindergarten teacher and each of the traditional half-session teachers to discuss the progress of the extended-day kindergarten students. Suggestions and implications

for instruction were discussed to insure consistency and continuity in both programs.

This study was limited to a six month period of time although the participants will be in this program for one full school year. Both the extended-day kindergarten group and the traditional half-session kindergarten group were administered the Metropolitan Readiness Test Level 1 Form Q as a post-test measure. The data was analyzed as to the increase or decrease of scores from the pre-test to the post-test of the extended-day kindergarten pupils as compared to the traditional half-session pupils.

RESULTS

The total raw scores from the Metropolitan Readiness Test Form P as a pretest and Form Q as a posttest were tabulated in order to compute the mean and standard deviation from the mean for each group. A critical ratio formula was then used to determine if there were any significant differences in pretest and posttest scores between the two groups.

Table One illustrates these findings.

Table I

Metropolitan Readiness Test

	N	M	SD	t
Pretest				
Half-Day	40	37.75	17.17	7.72
Extended Day	30	20.53	7.54	
Posttest				
Half-Day	40	54.33	12.78	.00
Extended Day	30	54.3	10.25	
Mean Gain				
Half-Day	40	15.15	7.88	7.29
Extended Day	30	33.8	12.33	

Analysis of the data indicated that the mean of the pretest scores was higher for the half-day group than the extended day group. This difference could be attributed to the fact that the extended day children were originally selected for the program because of their low scores on the Metropolitan Readiness Test Form P. A t of 7.72 for the pretest indicated that there was a significant difference between the means of the samples. Analysis of the data on the posttest scores indicated no difference in the means between the half-day and the extended day group.

The analysis of the data of the mean gain between the

pre and post test scores for the two groups indicated a greater increase in the mean for the extended day group. Utilizing statistical tests to determine the significance of the difference between the two groups, a t of 7.29 was computed, indicating that such differences could not have resulted by chance. The t was shown to be significant at the .01 level.

CONCLUSIONS

It would seem from the data that extending the day for kindergarten children with readiness skill deficiencies has a positive effect on the development of these skills. At the end of six months the extended day kindergarten group did reach the level of readiness skill development of the half-day group as indicated by the post-test results. This conclusion would agree with the study done by Humphrey (1980).

Whether this gain in skill development for the extended day group can be attributed to the extension of time as indicated by Adcock (1980) and Nieman and Gastright (1975) needs yet to be determined. Since very little evidence is yet available to indicate whether this increase in skill development can be attributed to only the time allotment, a further study should be conducted. This

study should be conducted using three groups. Two groups would be screened as having readiness skill deficiencies. One group would attend an extended day kindergarten and one group would attend a regular half-day session. The third group would not be deficient in readiness skills and would attend a regular half-day session. A comparison could then be made between the development of the skill deficient extended day group and the skill deficient half-session group with the development of the half-session group not deficient in readiness skills.

Results of the study conducted by this investigator indicated that extension of time in kindergarten day may be one of the factors that contribute positively to the development of readiness skills in those children screened as deficient in these skills. The findings also indicated that extension of time does not have a negative effect on the academic performance of those children.

RELATED RESEARCH
OF KINDERGARTEN PROGRAMS

Marjorie Oelrich (1979), in a paper presented at the National Conference of Association for Childhood Education International in 1979, reported findings that all day every day educational programs have positive effects on kindergarten children. She reported a study conducted by Lysiak and Evans comparing seven kindergarten curricula in relation to socioeconomic status and kindergarten attendance pattern. The conclusions of the study favored full day programs for low socioeconomic status children in all curricula. Oelrich (1979) conducted a study in spring of '74 which involved three kindergartens representing one of three attendance patterns - all day every day, half-day every day and all day alternate day. The Metropolitan Readiness Test was administered in May of that year. Significant differences were found between the all day alternate day group and each of the other groups. In some instances, differences were found between all day every day and half-day every day; wherever differences existed, they favored the all day every day group. Oelrich also reported that the Minnesota Association for Childhood Education adopted a position on Sept. 11, 1971:

> Kindergarten is a vital and important experience for all children. It is a year in which positive or negative attitudes toward school are

> formed. It should also be a year in which a child's strengths and weaknesses may be assessed and programs planned which will meet his individual needs, his interests, his particular level of maturity and his unique mode of learning. To meet the challenge set by the above statement requires that each child be respected and given individual attention and that teachers learn to know him as a unique personality. Therefore, we believe that a good quality full day kindergarten should be a goal toward which school districts should strive.

Winter and Klein (1970) conducted a study that examined an extended day kindergarten program in conjunction with an individualized curriculum. Two different groups of kindergarteners were chosen to participate in the extended day program. On the basis of standardized tests and teacher ratings, one group was identified as educationally disadvantaged and least ready for kindergarten instruction; the other group was identified as educationally advantaged and most ready for kindergarten instruction. Control groups were identified to match characteristics of the experimental groups. All the children attended the regular kindergarten program in the morning. In the afternoon, the experimental groups received an additional 90 minutes of structured activities that differed according to the needs of the children. For the disadvantaged group, the additional time was used to diagnose the children's difficulties and to adjust their

lessons accordingly. For the advantaged group, the additional time was used for creative approaches to learning that were based on the children's individual interests.

Analyses of the performance of the experimental control groups indicated positive effects of the extended day individualized program for both types of children. The disadvantaged experimental group performed significantly better than the control group on the Metropolitan Readiness Test and consistently exceeded the performance of the control group on both the Lee-Clark and the Stanford Achievement Test. The advantaged experimental group did not perform significantly better than the control group on these measures. However, their reading levels at the end of kindergarten were exceptional compared to the controls. All of the advantaged children in the extended day program were reading at the second pre-primer level and above. None of the control children were reading above the first pre-primer level. There were similar differences in their level of math readiness.

A follow-up study of these children was conducted after first grade which further showed even more positive effects of the extended day kindergarten program. Based on the Stanford Achievement Test, the disadvantaged ex-

perimental group exceeded the control group by almost three stanine units while the advantaged experimental pupils exceeded their controls by more than one grade equivalent unit. Their conclusion was that "extension of time does make possible a better balanced program that allows for a variety of approaches to learning and more individual attention at an age when this is very crucial."

Gorton and Robinson (1968), in a study of kindergarten programs, full day or half-day in the Penn Trafford School District in Pennsylvania, felt that traditionally kindergartens in public schools have been almost completely activity oriented and set up on a half day basis. Gorton and Robinson feel that the ability of a child to acquire formal knowledge at an early age has been proven in European countries where the child starts school one or two years earlier than American children. They state, "If we are going to require our children to acquire a greater core of detail at an earlier age then we must consider exposing them to the basic elements of language and math at an earlier age." Their solution to this earlier starting is the full day kindergarten. Their study reported the fact that since 1955 in the state of Hawaii the full day kindergarten has been an integral part of all

elementary schools. They further reported that in December, 1958 the Department of Public Instruction of the State of Hawaii conducted a study to compare half-day kindergarten programs with full day programs. The advantages of the full day programs were:

1. Children moved at own rate and made transitions from one activity to another at own rate.

2. Less time was spent on routine activities.

3. More individualization of instruction was present.

4. Children learned self-discipline through various routines and were better prepared for all day grade one.

5. The teacher could develop better habits of work in a more relaxed longer session.

The only disadvantages noted were that some five year olds need more frequent contacts with mother and this would not be possible in a longer session, and that the extended session would cost more.

The conclusions reached by the Department of Public Instruction included:

1. There seems to be a growing trend to increased time for younger children to be in school.

2. Historically, kindergarten began as a full day but went to half-day to accommodate larger numbers of

children.

3. The half-day teacher in 2½ to 3 hours is under great pressure to carry on an effective program.

4. Much time in half-day session is consumed in picking up, putting away and dressing and undressing for out of doors.

5. Most of today's children are ready for learning at an earlier age.

In a study done by Humphrey (1980), about two hundred children enrolled in a full day kindergarten program were compared to a random sample of half day students. The purpose of the programs was the same - to help children develop in cognitive, psychomotor, affective and linguistic skills. The only difference in the two programs was the time allotment. Results from the California Achievement Test indicated significantly higher scores for the full day participants. Follow-up testing when the children were first graders indicated significantly higher reading scores for the students who had attended full-day kindergarten compared to those who had attended half-day kindergartens.

Adcock and Others (1980) conducted a study designed to measure how the length of the school day affects the

academic achievement of kindergarten children. A total of 189 kindergarten children were divided into two groups. The study group consisted of 131 children from five classes who attended class for a full school day and the control group consisted of 58 children from three classrooms who attended class for the regular half-day program. Results indicated that the full-day program kindergarten children achieved significantly higher levels of academic skills than the half-day program children, as measured by the Survey Battery of the Metropolitan Achievement Tests.

Nieman and Gastright (1975) found a positive relationship between test scores and the amount of time students participated in pre-kindergarten and kindergarten classes. Findings were based on four years of research with five different standardized tests. The test scores indicated significant differences in intelligence quotient, readiness and achievement at end of pre-school, kindergarten, first and second grades. Pupils with pre-school and full day kindergarten experience scored higher than pupils with pre-school and half-day kindergarten experience. This positive relationship between test scores and amount of time in classes existed independent of a wide range of teaching styles, materials and methodologies.

Alper and Wright (1979) reported on a three month experiment with an extended day kindergarten program in the Phoenix, Arizona schools. This program met the goals established for it: to provide more time for individualized and instructional activities and to increase parent participation in instruction. The extended day program differed from the regular program in that it operated both morning and afternoon, only 12 children were involved in each extended day class whereas the average kindergarten class in Phoenix was 25, several field trips were arranged, teaching games and supplementary materials were used to reinforce and elaborate on regular kindergarten taught concepts, workshops were planned for parents and they were encouraged to help in the classroom, and teachers visited the homes of parents of every child in the program. Percentage gains on the Metropolitan Readiness Test were substantially higher for the ex ended day youngsters. Parents expressed positive feelings about all aspects of the program.

A study was conducted by the staff of the Amherst Elementary School in Amherst, Wisconsin, during the fall of 1980 to determine which of three types of kindergarten programs would be most advantageous to the School District

of Tomorrow River. The programs investigated were full-day daily, full-day alternate day, and half-day daily. Teacher and principal questionnaires were sent to selected schools in Wisconsin and to a few school districts selected randomly throughout the United States. Questionnaires were also mailed to parents who would have children in kindergarten during one or more of the following three school years. Additional information on the three programs was gathered during on-site visits to five school districts in Wisconsin, Ohio, and Minnesota. Based on the on-site visits and the survey data it was concluded that the full day program was advantageous in a number of ways. It offered more instructional time for students, more time for implementing special subjects (such as art, music, and physical education) in the curriculum, and prepares children for first grade better than the other programs. It also eliminated the problem and cost of mid-day busing and allowed children to be involved in all-school functions such as special assemblies and lunch programs. Nearly 100% of the parents, teachers, and principals involved with a full-day program favored it.

Practical considerations for the young child attending an extended day kindergarten have been addressed by

researchers. Naron (1981) felt that one concern for the young child attending a full-day kindergarten program was his or her ability to physically and psychologically adapt to that much time in school. Winter and Klein (1970) reported that "fatigue, frustration, or waning interest in school simply did not appear in their experimental pupils." They reported that a far higher percentage of children in the extended day program experienced very positive feelings about school than did children in the non-extended day program. In the study by Humphrey (1980) an examination of attendance patterns indicated no differences in absenteeism of children attending the full day compared to the half-day program.

An often stated opposition to expanded day kindergarten is based on parents' fear that the school will replace the home (Hess and others, 1978). However, the experimental full-day kindergarten programs that are being formed emphasize the importance of parent involvement. Two studies that reported significant gains for children attending full-day over half-day kindergarten involved parents extensively in the instructional process (Winter and Klein, 1970; Alper and Wright, 1979). According to Naron (1981), Curriculum Development Specialist, Chicago

Public Schools, "parents often prefer full day over half-day kindergarten for reasons of convenience: arrangement for the children's transportation, baby-sitting and parents' daily routine are all facilitated." Humphrey (1980) stated at the conclusion of his study, "Most parents of children who attend full day kindergarten prefer it."

Teachers' reactions to the extended day kindergarten have been positive. Ross (1976) felt that kindergarten teachers seem to prefer a full day program. Harris (1969) suggested that it is difficult for a teacher to meet the interests and needs of two groups of children in one day and that to do so can be "physically and mentally exhausting." In a study conducted by Mouw (1976), the teachers involved in the full day program reported that they were able to use the additional time to work on a more individualized basis with the students and that "they were no longer forced to put children in overcrowded groups because of the time factor."

In the study by Johnson (1974) which reported no significant differences in achievement between kindergarteners in a full day program and those in a half-day program, the school decided to continue the full day program

with full knowledge of the results. This decision was based on the favorable response to the program from both parents and teachers.

Public support for full-day kindergarten has been expressed by many professional organizations. Hess and others (1978) reported that the National Association for the Education of Young Children, the American Federation of Teachers, the Council of State School Officials and the Association of School Administrators have given support for the full-day program. Winter and Klein (1970) reported that in August of 1970 the American Association of Elementary Kindergarten Nursery Educators submitted a resolution that a "full day kindergarten be available to all children, organized flexibly to accommodate the needs of kindergarten children and teachers."

It seems evident from the research reviewed that the half-day kindergarten program which is traditional in many schools needs to be replaced with a longer extended day program so that each child who attends kindergarten receives as much personal attention as he requires in order to reach his maximum potential.

REFERENCES

Adcock, Eugene P. and others. A Comparison of Half-Day and Full-Day Kindergarten Classes on Academic Achievement. United States: Educational Resources Information Center, ERIC Document ED 194-205, 1981.

Alper, C.L. and Wright, D.L. "Extended Day Kindergarten Plus Parent Involvement: A Combination that Works." Phi Delta Kappan 61 (September 1979): 68.

Bloom, Benjamin S. Stability and Change in Human Characteristics. New York: Wiley, 1964.

Gorton, H.B. and Robinson, R.L. A Study of the Kindergarten Program, Full-Day or Half-Day. United States: Educational Resources Information Center, ERIC Document ED 017.327, 1968.

Harris, C.C. "His Own Hello." Young Children 25 (December 1969): 89-95.

Hess, F. and others. Kindergarten in American Education: A Discussion of Current Questions. United States: Educational Resources Information Center, ERIC Document ED 158 397, 1978.

Humphrey, J.W. A Study of the Effectiveness of Full Day Kindergarten. United States: Educational Resources Information Center, ERIC Document ED 190 224, 1980.

Johnson, E.W. An Experimental Study of the Comparison of Pupil Achievement in the All-Day Kindergarten and One Half Day Control Group. United States: Educational Resources Information Center, ERIC Document ED 115 361, 1974.

Lazar, I. and others. "The Persistence of Preschool Effects." Report to the Administration on Children, Youth, and Families. Washington, D.C.: Office of Human Development Services, HEW, 1977.

Mouw, A.J. The Description and Evaluation of the Alternate Day - Full Day Kindergarten Program. United States: Educational Resources Information Center, ERIC Document ED 129 435, 1976.

Naron, Nancy K. "The Need for Full Day Kindergarten." Educational Leadership 38 (January) 306-09.

Nieman, Ronald H. and Gastright, John J. Pre-school Plus All-Day K: The Cumulative Effects of Early Childhood Programs on Cognitive Growth of 4-5 Year Old Children. United States: Educational Resources Information Center, ERIC Document ED 05 998, 1975.

Oelrich, Marjorie L. Kindergarten: All Day Every Day. United States: Educational Resources Information Center, ERIC Document ED 179 282, 1979.

Ross, E.D. The Kindergarten Crusade: The Establishment of Pre-school Education in the United States. Athens, Ohio: Ohio University Press, 1976.

Winter, M. and Klein, A. Extending the Kindergarten Day: Does It Make a Difference in the Achievement of Educationally Advantaged and Disadvantaged Pupils? United States: Educational Resources Information Center, ERIC Document ED 087 534, 1970.

Wisconsin State Department of Public Instruction. A Comprehensive Study and Evaluation of Three Types of Kindergarten Programs. Final Report. United States: Educational Resources Information Center, ERIC Document ED 201 384, 1980.

APPENDIX

A. Test Scores

	HALF-DAY		EXTENDED DAY	
	Pretest	Posttest	Pretest	Posttest
1.	39	54	36	56
2.	49	53	21	66
3.	50	59	24	62
4.	22	28	16	60
5.	56	70	31	56
6.	22	26	10	63
7.	45	67	8	27
8.	39	52	33	67
9.	39	53	22	55
10.	62	73	23	37
11.	57	63	34	52
12.	61	73	30	54
13.	46	67	28	53
14.	45	56	26	56
15.	41	54	26	56
16.	37	43	14	44
17.	53	66	20	73
18.	56	64	21	65
19.	42	61	8	44
20.	45	66	21	59
21.	23	61	15	60

	HALF-DAY		EXTENDED DAY	
	Pretest	Posttest	Pretest	Posttest
22.	35	61	19	54
23.	67	75	14	64
24.	27	31	22	40
25.	24	44	11	57
26.	39	64	13	34
27.	32	58	19	65
28.	34	47	19	49
29.	29	62	12	49
30.	25	50	20	52
31.	38	56		
32.	34	37		
33.	32	34		
34.	30	27		
35.	50	59		
36.	37	49		
37.	34	56		
38.	46	63		
39.	26	47		
40.	20	44		